

Remarks

The invention relates to a curable adhesive composition that can be considered a "hybrid" adhesive because it exhibits the tackiness associated with a pressure sensitive adhesive and it can be cured to provide a structural adhesive. The curable adhesive composition includes a polyacrylate component, an epoxy component, and a cationic initiator. As described by the specification at page 2, lines 30-32, it is believed that the pressure sensitive adhesive properties can be due to the polyacrylate component, and the structural adhesive properties can be due to the epoxy component. That is, the polyacrylate component is selected to provide the desired tackiness so that the curable adhesive composition can be considered a pressure sensitive adhesive. In addition, the epoxy component is provided so that it will react to form a cured adhesive having an interpenetrating polymer network according to the presently claimed invention. Because the curable adhesive composition of the invention can be used with optical elements, the components of the curable adhesive composition are selected to provide an optical clarity of the uncured adhesive and the cured and aged adhesive that satisfies the optical clarity requirements as claimed. In particular, the luminous transmission of the curable adhesive composition and the cured and aged adhesive is greater than 90%, the haze of the curable adhesive composition and the cured and aged adhesive is less than 2%, and the opacity of the curable adhesive composition and the cured and aged adhesive is less than 1%.

The outstanding Office Action includes two prior art-based rejections. Claims 1-15 and 17-22 stand rejected under 35 U.S.C. § 102(e) or under 35 U.S.C. § 103(a) over U.S. Patent No. 6,319,603 (Komiya et al.). Claims 15 and 16 stand rejected under 35 U.S.C. § 103(a) over Komiya et al. and U.S. Patent No. 5,773,485 (Bennett et al.). These rejections are traversed.

Komiya et al. are directed at a liquid curable resin composition. According to Komiya et al., the "composition is suitable as a photo-curable adhesive, a photo-curable sealing material, a resin for optical three-dimensional molding, and a coating material for optical fibers, optical fiber ribbon matrix, and the like." See Komiya et al. at column 1, lines 9-19.

Komiya et al. are not directed at providing adhesive that provides a luminous transmission of the curable adhesive composition and the cured and aged adhesive that is greater than 90%, a haze of the curable adhesive composition and the cured and aged adhesive that is

less than 2%, and an opacity of the curable adhesive composition and the cured and aged adhesive that is less than 1%. The curable adhesive composition according to the present invention is useful with optical elements and allows for transmission of light therethrough, satisfying the luminous transmission, haze, and opacity properties identified in claim 1. As described by the present specification at page 16, lines 8-19:

"Optical elements include articles and products that have an optical effect or optical application, such as screens for computers or other displays; components of such screens such as polarizing layers, reflective layers, and that reflective layers, selectively reflective layers such as infrared reflecting optically clear layers; coatings for windows which may polarize or reflect; other partially or fully reflective optically transmissive products, etc."

"Examples of optical elements include optical elements wherein an adhesive is used to bond together one or more different layers of optical materials, typically layers or films that are at least partially optically transmissive, reflective, polarizing, or optically clear. Optical elements typically include a number of different layers of different materials, which can be any one or more of polymeric, glass, metal or metallized polymer, or of the present adhesive or another adhesive, e.g., another pressure sensitive or structural adhesive."

Komiya et al., in contrast, are not directed at an adhesive composition that can be used with optical elements and provides for transmission of light therethrough, satisfying the luminous transmission, haze, and opacity properties of claim 1.

Komiya et al. are concerned with providing a coating for optical fibers or providing an adhesive for bonding optical fibers together. See Komiya et al. at column 5, lines 22-30, and column 9, lines 10-32. No reason has been provided in the outstanding Office Action why one would expect a coating for optical fibers for an adhesive for bonding optical fibers together to possess the luminous transmission, haze, and opacity properties according to claim 1. Because Komiya et al. are not concerned with transmission of light through the coating of optical fibers or the adhesive used for bonding optical fibers together, one reading Komiya et al. would not be led

to a curable adhesive composition having the luminous transmission, haze, and opacity properties provided by claim 1.

It is recognized that Komiya et al. discuss color change properties at column 12, lines 14-19. It is pointed out, however, that this discussion relates to the ability to identify an optical fiber after the coating has aged on the optical fiber. This is not a property of performance of an optical element as a result of light passing therethrough according to the present invention.

Because the curable adhesive composition according to the invention is intended to be used in optical elements to provide optical transmission therethrough, the components of the adhesive are selected to provide for the luminous transmission, haze, and opacity properties as provided by the presently claimed invention. Komiya et al. provide no reason to select their liquid curable resin composition in a manner that provides the properties of luminous transmission, haze, and opacity as required by the presently claimed invention. In view of this, one having ordinary skill in the art would not have looked to Komiya et al. to suggest a curable adhesive composition having the properties of luminous transmission, haze, and opacity as provided by the presently claimed invention.

Furthermore, because Komiya et al. are directed at a liquid curable resin composition, it is submitted that the components of the composition would not be selected to provide tackiness properties so that the liquid curable resin composition could be provided as a layer of pressure sensitive adhesive according to the presently claimed invention. As described by the specification of the above-identified patent application beginning at page 6, line 31, the polyacrylate component is selected to provide the pressure sensitive adhesive properties that include "(1) aggressive and permanent tack, (2) adherence with no more than finger pressure, (3) sufficient ability to hold onto an adherend, and (4) sufficient cohesive strength." See the specification at page 7, lines 10-14. Clearly, the polyacrylate component is selected so that it has sufficient molecular weight to provide the curable adhesive composition with pressure sensitive adhesive properties. In contrast, Komiya et al. are directed at providing a polymerization reaction to cure the liquid curable resin composition. It is believed that Komiya et al. select the components of the composition so that the molecular weights are relatively low and the resulting composition is a "liquid" prior to curing. The Examiner's attention is directed to the examples of

Komiya et al. at column 12, lines 1-13, where the liquid curable resin compositions are applied to glass plates and irradiated with ultraviolet light to cure the films.

In contrast to Komiya et al., the curable adhesive composition according to the present invention is provided as a pressure sensitive adhesive which means that it possesses the properties of tackiness associated with pressure sensitive adhesives. The curable adhesive composition according to the invention can be provided in a solvent and applied to a substrate and then dried to form a pressure sensitive adhesive. The resulting pressure sensitive adhesive can later be cured.

In view of the above comments, Komiya et al. fail to disclose and would not have suggested the claimed curable adhesive composition. Accordingly, withdrawal of the rejection over Komiya et al. is requested.

Bennett et al. would not have suggested modifying Komiya et al. to achieve the claimed invention. Bennett et al. are directed at viscoelastomeric materials having high shear at ambient and elevated temperatures prepared from a blend of ethylenically unsaturated monomers. See Bennett et al. at column 1, lines 11-14.

In view of the above comments, withdrawal of the rejection over Komiya et al. and Bennett et al. is requested.

The outstanding Office Action reports that claims 23-41 are withdrawn from consideration as a result of a restriction requirement. Claims 23-41 are cancelled by the above amendment without prejudice to pursuing these claims in a continuing patent application.

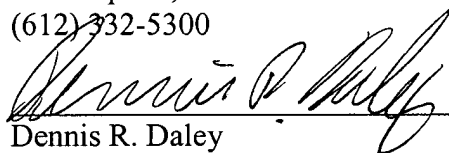
It is believed that this application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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